

# PATENT SPECIFICATION

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## (54) SEAT

(71) We, ESTABLISSEMENTS BERTRAND FAURE, a French Body corporate of Chemin du Lavoir — Rocquencourt — 78150 Le Chesnay, France, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement.

The present invention relates to a seat comprising a backing part rigidly connectible to a seat frame and a squab, the squab comprising a moulded resilient body of foamed material contained in a cover.

It should be first stated that the expression "squab" herein designates any padded part of the seat that is intended to be in contact with the body of a user of the seat. The expression therefore covers any padded portion such as a backrest, a head rest, elbow rest, or a cushion.

Generally, when taking his place on a seat, a user first bears upon peripheral zones of the various squabs so that the foamed material situated in these zones is subjected to heavy compression which causes it to deform considerably. However, since in the known squabs of the above-mentioned type, the cover adheres to the foamed material over its entire surface, the peripheral portions of the cover, which are firmly secured to the compressed foamed material, undergo the same deformation as this material and consequently fold or crease in the same manner. Unfortunately, after the seat has been in use for a lengthy period, the cover finally becomes locally detached from the foamed material and becomes marked where the folds occur, so that the squab becomes unattractive in appearance.

Such marks are observed for example on the side faces of the seat cushion.

The present invention seeks to eliminate this drawback.

Accordingly the present invention provides a seat comprising a backing part rigidly connectible to a seat frame and a squab, the squab comprising a moulded

resilient body of foamed material contained in a cover which forms a jacket, wherein peripheral portions of the cover are not adhered to the foamed material which underlies the said portions and have free edges, means securing the free edges of the peripheral portions to the backing part, and wherein the resilient body of foamed material has in each of its zones covered by the peripheral portions of the cover that are not adhered to the foamed material a recessed portion, the bottoms of the recessed portions being substantially parallel to said peripheral portions of the cover.

Thus when the user bears on one of the peripheral zones of the squab, the corresponding portion of the cover does not need to deform resiliently, and this prevents it from being permanently marked along the fold lines of the foamed material. The cover is completely separated from the foamed material over zones opposite each of these recessed portions, and this enables the cover to fold completely freely when the foamed material is compressed.

In a preferred embodiment, the means for securing the free edges of the peripheral portions of the cover are constituted by a resilient wire secured to the free edges of the cover and retained in a channel formed in the backing part.

It will be readily appreciated that securement is very simple and that consequently the various component parts of the seat can be rapidly fitted in position.

Furthermore, it may also be advantageous for the squab to have a peripheral cut-away portion in which an edge of the backing part fits. An exterior face of this edge suitably has bevelled zones constituting extensions of the recessed portions and extending to the bottom of each of the latter. When the squab and the backing part are fitted together they cannot in fact be displaced relatively to each other. Also, the provision of the bevelled zones avoids sharp corners at the surfaces where the squab and the

backing part join each other, and the bevelled zones thus completely cover up the presence of the recessed portions after the free edge of the cover has been secured in position.

5 The present invention also relates to the manufacture of the squab of a seat having the above-mentioned features and, to this end, comprises moulding the foamed material in a mould internally lined with a cover, wherein rods are introduced into the mould before the material is expanded, these rods bearing against the peripheral portions of the cover which are applied to 10 the side walls of the mould for ensuring that said peripheral portions do not adhere to the foamed material.

It will be understood that the foamed material cannot come into contact with the portions of the cover that are covered by the rods and that consequently it cannot adhere to these portions. The rods however enable the recessed portions of the squab to be formed in a simple manner.

25 Finally, to enable the above-mentioned method to be carried out, the present invention provides a mould which comprises a lower portion in which is formed a moulding cavity, a clamping plate adapted to bear on an area surrounding the mouth of the cavity and to hold the free edge of the cover on said surrounding area, and a mould-top, the inner face of which, when placed on the clamping plate, is substantially in the same plane as the mouth of the cavity, wherein on 30 certain of its edges the inner face of the mould-top carries rods adapted to bear on the peripheral portions of the cover for ensuring that said peripheral portions do not adhere to the foamed material.

A preferred embodiment of the present invention will now be more particularly described by way of example with reference to the accompanying drawings in which:—

45 Figure 1 is a sectional view of a portion of a seat embodying the invention, the squab in the example shown constituting the padded portion of a back-rest, and

50 Figure 2 is a sectional view of a mould for producing the squab illustrated in Figure 1.

In the example illustrated in Figure 1, the seat squab is designated by the numeral 1 and constitutes a front portion of the back-rest of a vehicle seat. The seat squab 1 comprises a body of resilient foamed material 2 which is moulded into a cover 3 which forms a jacket, the squab being fitted in a known manner in a conventional back-rest frame 4. The squab also has a peripheral cut-away portion 5 in which fits an edge of a backing part 6 rigidly connected to the frame. This backing part 6, which is covered by a jacket 7 and has a peripheral channel 8, here forms the rear portion of the back-rest.

Certain peripheral portions of the cover 3 are arranged not to adhere to the foamed material, so that they are able to fold freely when a user of the seat bears on the corresponding peripheral portions of the squab 1. 70 In Figure 1, which shows one of the lateral faces of the back-rest, it will be clearly seen that a peripheral portion 9 of the cover is spaced from the moulded material opposite said face. The peripheral portion 9 however is firmly secured at its edge along the side face of the back-rest, said edge having a hem enclosing a resilient wire 10 which is retained in the exterior channel 8 in the part 6. It will be seen that the edge of the cover ensures that the squab 1 and the part 6 are firmly connected to each other in a simple manner.

It will be seen that in each of the zones of the squab covered by the peripheral portions of the cover that do not adhere to the foamed material, the foamed material has a recessed portion, the base of which is substantially parallel to the adjacent peripheral portion 9. Such recessed portion, designated by the reference numeral 11 and covered by the associated peripheral portion 9 of the cover, can be seen particularly clearly in Figure 1. 90

Since the cover is separated from the foamed material over the recessed portion, it is able to fold quite freely when the foamed material is compressed. 95

Finally, it will be seen that an outer face of the edge of the part 6 has a bevel 6a forming an extension of the recessed portion 11 and extending to the base of the latter portion. Sharp corners at the surfaces where the squab 1 and the part 6 join are avoided, and the recessed portion 11 is consequently completely hidden after the free edge of the cover has been secured in position. 100 105

Figure 2 illustrates a mould for producing the squab 1.

From this Figure it can be seen that the mould used comprises a lower portion 12, in which is formed the moulding cavity 13, a clamping plate 14, constituted by an element having an inner perimeter which corresponds to that of the cavity, and a 110 115 mould-top 15 adapted to co-operate with an intermediate part 16 adapted to be mounted on the clamping plate. It will also be seen that two rods 17 are secured by means of screws 18 in portions 19 cut away along the two opposite edges of the inner face 20 of the mould-top. These rods, which are each made of a flexible material such as polyurethane and comprise a relatively thick portion 21, which projects from the cut-away portion 19 and is extended by a much thinner portion 22, are adapted to bear against the peripheral portions of the cover after the mould top has been closed, these peripheral portions covering the side faces 120 125 130

of the back-rest as shown at 9 in Figure 1.  
The following procedure is followed for producing the squab 1:

The cover 3 is first applied to the base and the walls of the moulding cavity 13. The cover used is preformed and its dimensions are such that its free edge can be folded over on to the area surrounding the mould cavity.

The clamping plate 14 is then placed on the free edge of the cover which is thus held on the area surrounding the cavity, and thereafter the intermediate part 16 is placed on the clamping plate. After these first operations have been carried out, the material to be moulded is introduced, and the mould-top 15 is closed before foaming of the moulded material begins.

It will be appreciated that when the mould-top is closed, the rods 17 bear against the peripheral portions of the cover 3 that are intended to cover the side faces of the back-rest, and that these rods prevent the foamed material from coming into contact with these peripheral portions.

The recessed portion 11 and the corresponding part of the cut-away portion 5, which can be seen in Figure 1, of course correspond respectively to the indentations formed by the portions 22 and 21 respectively of the rod seen on the left in Figure 2.

#### WHAT WE CLAIM IS:—

1. A seat comprising a backing part rigidly connectible to a seat frame and a squab, the squab comprising a moulded resilient body of foamed material contained in a cover which forms a jacket, wherein peripheral portions of the cover are not adhered to the foamed material which underlies the said portions and have free edges, means securing the free edges of the peripheral portions to the backing part, and wherein the resilient body of foamed material has in each of its zones covered by the peripheral portions of the cover that are not adhered to the foamed material a recessed portion, the bottoms of the recessed portions being substantially parallel to said peripheral portions of the cover.

2. A seat as claimed in Claim 1, in which the means for securing the free edges of the peripheral portions of the cover comprise a resilient wire secured to the free edges of

the cover and retained in a channel formed in the backing part.

3. A seat as claimed in Claim 1 or Claim 2, wherein an edge of the backing part fits into a peripheral cut-away portion in the body of foamed material, an outer face of said edge having bevelled zones forming extensions of the recessed portions and extending to the bottom of each of these recessed portions.

4. A method of producing the squab of a seat as claimed in any one of Claims 1 to 3, by moulding the foamed material in a mould lined on its interior by the cover said method comprising introducing into the mould, before expansion of the foamed material, rods which bear against peripheral portions of the cover that are applied to the side walls of the mould for ensuring that said peripheral portions do not adhere to the foamed material.

5. A mould for carrying out the method claimed in Claim 4, comprising a lower portion in which is formed a moulding cavity, a clamping plate adapted to bear on an area surrounding the mouth of the cavity and to hold the free edge of the cover on said surrounding area, and a mould-top, the inner face of which top, when placed on the clamping plate, is substantially in the same plane as the mouth of the cavity, wherein on certain of its edges, the inner face of the mould top carries rods adapted to bear on the peripheral portions of the cover for ensuring that said peripheral portions do not adhere to the foamed material.

6. A seat substantially as herein described with reference to the accompanying drawings.

7. A method of producing the squab of a seat substantially as herein described with reference to the accompanying drawings.

8. A mould for making the squab of a seat as claimed in any one of Claims 1 to 3 substantially as herein described with reference to Figure 2 of the accompanying drawings.

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COMPLETE SPECIFICATION

2 SHEETS

*This drawing is a reproduction of  
the Original on a reduced scale*

Sheet 1

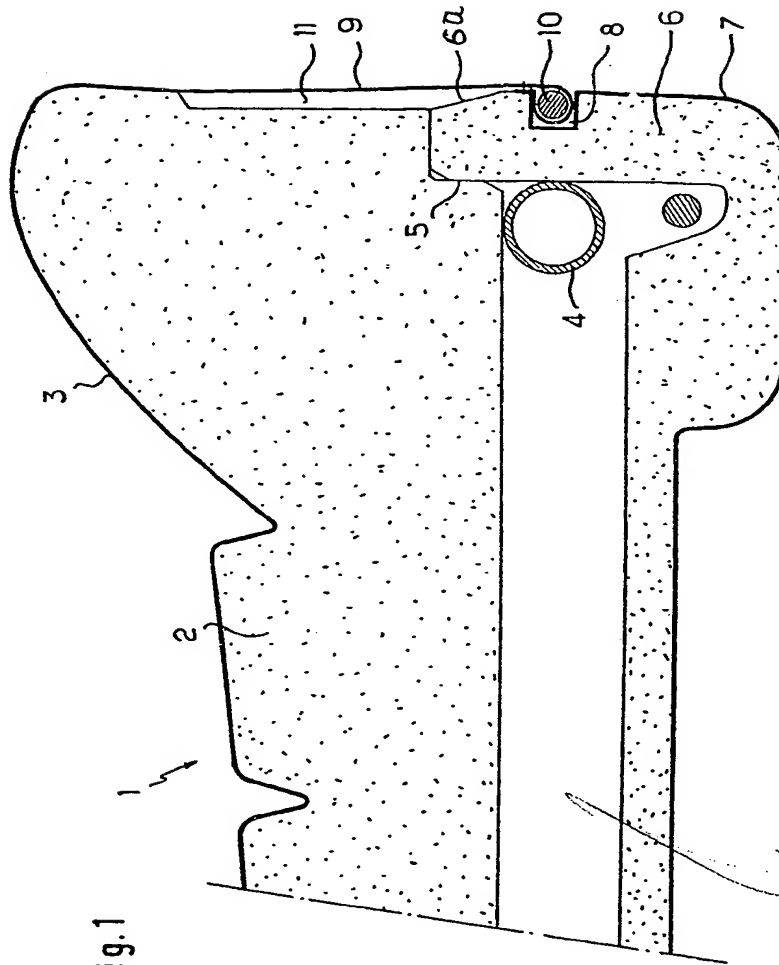


Fig. 1

Fig. 2

